

**Testimony of Thomas P. Jacobus General Manager, Washington Aqueduct
Baltimore District, U.S. Army Corps of Engineers Before the Committee on
Government Reform U.S. House of Representatives March 5, 2004**

Good Morning, Chairman Davis and Members of the committee. I am Tom Jacobus, the general manager of Washington Aqueduct.

Washington Aqueduct, which is a part of the Baltimore District of the US Army Corps of Engineers, is a public water utility. We are regulated by the United States Environmental Protection Agency's Region 3 in Philadelphia.

In your letter requesting me to be here today, you asked me to focus on two points:

First, what practices does Washington Aqueduct use to protect the water?

And secondly, do the new chemicals (i.e., chloramines) used to treat the water for bacteria at the treatment plants have a highly corrosive effect on service lines?

Thank you for the opportunity to be here and to address these questions.

Washington Aqueduct provides potable water not just to the District of Columbia Water and Sewer Authority, but also to Arlington County, Virginia and the City of Falls Church in Virginia as well.

The provisions of the Safe Drinking Water Act and its associated regulations are the basis for all operations concerning the production, storage, and transmission of the drinking water produced and sold by Washington Aqueduct to its wholesale customers.

The Potomac River is the source of all water treated by Washington Aqueduct at its Dalecarlia and McMillan treatment plants. The treatment consists of chemically induced sedimentation using aluminum sulfate as the coagulant; filtration in dual media sand and anthracite coal filters; and disinfection using chlorine as the primary disinfectant and chloramines as a secondary disinfectant.

On-line instruments continually evaluate the physical and chemical nature of the water as it proceeds through the treatment process. The Washington Aqueduct's EPA-certified water quality laboratory conducts more than 30,000 analyses each year measuring hundreds of different parameters from samples taken in the treatment plant, the storage reservoirs and the distribution systems.

In November 2000, Washington Aqueduct modified its disinfection process by shifting to chloramines as a secondary disinfectant. The purpose of this change

was to ensure that the customer distribution systems would be in compliance with the new EPA regulations concerning disinfection by-products.

Our decision to convert to chloramines was based on an engineering analysis of options and consultation with our customers and EPA. In the three years since that conversion, the process change has worked as planned to lower the level of disinfection by-products.

We used nationally respected consultants to plan and design the processes to lower the disinfection byproducts in the water in the distribution system.

Recent media reports stated that Washington Aqueduct ignored EPA's written guidelines warning that a significant change in disinfection treatment could increase lead corrosion. This is inaccurate. Throughout the planning and design of the chloramine project we considered the possibility that this disinfectant change would increase the level of nitrification in the distribution system. Such an increase could cause a lowering of pH in the distribution system, thereby increasing the possibility of corrosion. We believe that prompting this kind of consideration of possible effects is the intent of the recommendation contained in EPA's Microbial and Disinfection Byproduct Rules Simultaneous Compliance Guidance Manual. We put a plan in place to minimize the potential for nitrification and hired a contractor to monitor and analyze the distribution system looking for nitrification for six months following conversion. During this period, we did not observe nitrification.

We do not know if the change to chloramines is responsible for the concentrations of lead being detected in the water in some homes in the District of Columbia that are connected to the water mains by lead service lines. We are aware that presently there are individuals engaged in scientific research in academic institutions and elsewhere focusing on the relationship between chloramines and lead levels in tap water. We will work with them in any way we can to contribute to that research. However, we are not aware of any written guidance or finding from EPA that connected conversion to chloramines as a direct chemical precursor for increased corrosivity.

Our current efforts are directed at reviewing and revising, in any necessary ways, the Optimal Corrosion Control Treatment that is currently practiced at our treatment plants. We are fully engaged with EPA, the District of Columbia Water and Sewer Authority, and the District of Columbia Department of Health to quickly and safely reduce the corrosivity of the water. We have formed a technical expert working group whereby teams will address the water treatment process, the distribution systems, and the communication of the various risks to the public.

When we recommended pH control as the Optimal Corrosion Control Treatment in 1994 and when EPA subsequently approved it, there was a consensus among

the Washington Aqueduct, its customers and EPA that pH control would be sufficient to protect the public from lead and copper leaching from pipes in their homes. In considering the potential use of a phosphate-based corrosion inhibitor, several factors were used to evaluate this option against the demonstrated effectiveness of pH control as an alternative including: the environmental effects of combined sewer overflows containing phosphates, the costs to procure the corrosion inhibitor chemical, and the cost to remove it at the waste water treatment plants. The recommendation of Washington Aqueduct and its wholesale customers was to use pH control. EPA made a conditional designation of pH control as Optimal Corrosion Control Treatment in 1997 and made a final decision for Washington Aqueduct to use pH control in 2000. In 2002 EPA made slight modifications to this final decision, but kept pH as the Optimal Corrosion Control Treatment.

Washington Aqueduct, its customers and EPA are now reviewing this Optimal Corrosion Control Treatment designation based on the lead concentrations the District of Columbia Water and Sewer Authority is reporting to EPA. We will jointly and publicly announce by March 10 our specific plans to correct the current situation. Important technical analysis has already begun. We expect to use a variety of scientific approaches to arrive at the solution.

We recognize the importance of arriving at a safe and effective solution as soon as possible. Under our current schedule, our objective is to arrive at a water chemistry change decision by May 1 with a partial system test in the District of Columbia water to begin about June 1. This will be followed by a full system implementation about September 1.

It will take time (at least several months) for new chemistry to be effective in putting a thin mineral lining on the interior of the service lines. We, along with our wholesale customers, will be monitoring the progress and will give frequent and regular updates to the public.

Thank you for this opportunity to address these issues. I will be happy to answer any questions you may have.